A MEASURE OF EXPERIENCES WITH VIOLENCE AND POST-TRAUMATIC STRESS DISORDER

A Senior Honors Thesis

by

KRISTA NICOLE BENSON

Submitted to the Office of Honors Programs
& Academic Scholarships
Texas A&M University
in partial fulfillment of the requirements of the

UNIVERSITY UNDERGRADUATE
RESEARCH FELLOWS

April 2001

Group: Psychology 2

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ABSTRACT

A Measure of Experiences with Violence and

Post-Traumatic Stress Disorder. (April 2001)

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This present study examined the relationship between Post-Traumatic Stress Disorder (PTSD) symptoms, attitudes about sexuality, number of incidents of lifetime interpersonal violence (directly experienced, witnessed, and told as experienced by someone close), and substance use. Participants were 73 male and 211 female undergraduate students from Introductory Psychology. It was hypothesized that numbers of incidences of interpersonal violence and rates of PTSD symptoms would be related. Also, individuals who have directly experienced sexual assault or know many who have may have more negative views of sexuality. In addition, women who experience PTSD symptoms may have more negative feelings about sexuality. Incidence of PTSD symptoms, directly experienced sexual threat, and indirectly experienced sexual threat in women were found to related to sexual preoccupation. Self-reported trauma indicated relationships between PTSD symptoms; also, for women found strong relationships on PTSD symptoms and directly and indirectly experienced sexual violence.

ACKNOWLEDGMENTS

Thank you to Dr. Emily Davidson for the time and effort she put into helping me with my endeavors and this final product.

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Researchers have long been interested in the relationship between violence and Post-Traumatic Stress Disorder (PTSD). For many years after World War I and World War II, veterans experienced what was then known as shell shock or combat fatigue; after the Vietnam Conflict, veterans again experienced these same symptoms, and the diagnosis of Post-Traumatic Stress Disorder was developed.

Since then, researchers and practitioners have found these same symptoms in persons exposed to a variety of non-combat violent situations, including sexual victimization and physical assault. Dansky, Byrne, and Brady (1999), in interviews with 91 subjects found that of the portion of the sample with a history of assault, nearly one-half met criteria for PTSD at some point in their lives. In addition, Breslau, Chilcoat, Kessler, and Davis (1999), in a wide-scale computerized interview by telephone of over 2,000 people, found that repeated trauma, and exposure to previous trauma increased risk for PTSD.

There were however differences in rates of violence and PTSD in men and women. Dansky, et al. (1999) found that women were two times more likely than men to report physical violence by an intimate partner. They also found that women were twice more likely to report both current and lifetime PTSD. North, Smith, and Spitznagel (1994) in a study completed done after a mass shooting, interviewed 136 people. Of the participants, 20% of men and 36% of women had PTSD.

Sexual violence may be particularly damaging. Wilson Calhoun and Bernat (1999), using 330 undergraduate women, had participants listen to a tape of a dangerous dating situation. They examined the relationship between PTSD and decision latency

(how long into the tape it took a participant to recognize it as a dangerous dating situation), and previous sexual assault. They found that decision latency was directly related to PTSD, and that 44% of the participants reported some form of childhood and/or adult sexual victimization. Farley and Barkan (1998) examined the relationship between violent trauma and PTSD in 130 prostitutes. They specifically looked at childhood sexual assault, childhood physical assault, rape in adult prostitution, and physical threat and/or assault in adult prostitution. They found that 68% of the participants met the criteria for PTSD. They also found that childhood physical abuse and rape in prostitution directly related to PTSD. Letourneau, Resnick, Kilpatrick, Saunders, and Best (1996), in telephone interview with 391 women with a mean age of approximately 42 years, found that women who had experienced PTSD at some point in their lives would be at increased risk for sexual problems compared to women without a history of PTSD, and that women who experienced some kind of penetration during sexual assault would be at greater rise for sexual problems (including self-reported lack of interest in sex and inability to become sexually aroused) than victims of other crimes. It was thought that these sexual behavioral problems stemmed from negative feelings from sexual assault. Other studies, such as Paton and Mannison's (1995) study with 345 undergraduates and Snell, Fisher, and Schuh's (1992) study measured general relationship and sexual attitudes, but they did not related attitudes about sexuality to past trauma.

Farley and Barkan (1998) also introduced the concept of 'partial' PTSD. For them, the requirement for partial PTSD was that a participant had to exhibit two of three

symptoms of PTSD. This brought their numbers for analysis up to 76% with PTSD or partial PTSD, from 68% with PTSD. North, et al. (1994) also looked at those who had at least one symptom, but not full PTSD. As stated previously, 20% of men and 36% of women met the full criteria for PTSD. An additional 76.6% of men and 62.5% of women exhibited at least one PTSD symptom, but not full PTSD; thus, almost 100% had at least one symptom.

In another direction, Schauben and Frazier (1995) examined the relationships between secondary trauma and PTSD. Using mailed surveys, data from 148 psychologists and sexual violence counselors was collected. Here, PTSD symptoms correlated highly to more instances of self-reported vicarious trauma. These also correlated highly to counselors who reported having higher percentages of clients as sexual violence survivors. Likewise Dansky, et al. (1999) included indirect trauma (exposure to dead bodies) in the study of cocaine addicts and Breslau, et al. (1999) included indirectly experienced trauma as two of four categories of trauma (learning about trauma experienced by a loved one, and learning about the sudden unexpected death of a loved one) in their telephone interviews.

McGruder-Johnson, Davidson, Gleaves, Stock, and Finch (2000), again with undergraduate students as participants, used a questionnaire assessing PTSD symptoms and another measuring frequency of occurrence for direct sexual violence, witnessed sexual violence, told about sexual violence, direct nonsexual violence, witnessed nonsexual violence, and told about nonsexual violence.

The study by McGruder, et al. is important because it is one of few methods that assess direct and secondary trauma at the same time. Secondary trauma is rarely assessed, and so there is even less agreement on how to test for it. Motta, Kefer, Hertz, and Hafeez (1999) created a measure based on the DSM-IV criteria for trauma, but only assessed one secondary trauma, rather than how many traumas an individual had experienced in his/her lifetime.

These criteria for trauma stem from the DSM-IV. The symptoms of PTSD can include a response to the event involving intense fear, helplessness or horror, persistent reexperiencing of the trauma, persistent avoidance of stimuli associated with the trauma, and persistent symptoms of increased arousal. All of the studies did look into this, but the manner in which the participants were asked to describe their trauma differs greatly, and range from very specific to very broad. Interviews also take a great deal of time, and must be conducted one-on-one with the participant. In an interview, the participant loses a sense of anonymity and might refrain from describing trauma that the participant has experienced. Very few studies looked at both sexual and nonsexual trauma, and only two studies included trauma that was directly experienced and trauma that was either observed or experienced by an acquaintance of the participant. For this reason, the Lifetime Involvement in Violent Events Survey (LIVES), used by McGruder, et al. (2000) is an important tool, as it is an in depth questionnaire covering specific sexual and nonsexual traumas that were directly and indirectly experienced.

Purpose

The purpose of this study was to measure the correlations between LIVES and PTSD-SR to establish validity, and assess the relationship between PTSD and sexual attitudes. The predictors were that there would be a high correlation between the scores on LIVES and scores on the PTSD-SR. Also, individuals who have directly experienced sexual assault or know many who have may have more negative views of sexuality. Correspondingly, women who experience PTSD symptoms may have more negative feelings about sexuality.

Method

Sample

The sample in this study consisted of 284 undergraduate students at Texas A&M University. The participants were from a research pool of students enrolled in Introduction to Psychology, and were required to complete five hours of research credit. The participants were required to return a second time at either a two-week or one-month interval. For the second session, 235 participants returned. However, for the sake of analysis, the first sets of data were used.

The average age of the participants was 18.8 years old. Of the participants, 54.9% were 18 years old, 31.3% were 19 years old, and 13.9% were 20 years or older, with ages ranging from 18-25, and one 41 year old. Females accounted for 74.3% of the sample. Half the participants reported their ethnicity as European American and 30.5% reported being 'other.' Of the sample, 64.8% were freshmen, and 98.9% reported being single. The participants reported their parents as mostly married, 77.1%, and 62.0% reported household incomes above $60,000 a year. All demographic variables are listed in Table 1

Measures

The participants completed a 148-item questionnaire consisting of six parts.

Demographics Questionnaire Background information was collected, including age, gender, classification, ethnicity, urban or rural hometown residence, subject's marital status, parent marital status, and parental income.

Table 1

Demographics

Variable	%	N
Gender		
Male	25.7	73
Female	74.3	211
Ethnicity		
African American	3.6	10
European American	49.5	138
Mexican American	9.3	26
Asian American	5.4	15
Native American	1.8	5
Other	30.5	85
Age		
18	54.9	156
19	31.3	89
20	9.2	26
21	2.8	8
22+	1.8	5
Classification		
Freshman	64.8	184
Sophomore	27.8	79

Table 1 continued

Junior	6.0	17
Senior	1.1	3
Other	0.4	1
Marital Status		
Single	98.9	281
Married	0.4	1
Divorced	0.7	2
Parent Marital Status		
Single	2.8	8
Married	77.1	219
Divorced	16.2	46
Other	3.9	11
Parent Yearly Income		
Under 5,000	0.7	2
6,000 - 10,000	0.4	1
11,000 - 15,000	1.5	4
16,000 - 20,000	1.8	5
21,000 - 30,000	6.9	19
31,000 - 40,000	6.9	19
41,000 - 50,000	9.1	25
51,000 - 60,000	10.6	29

Table 1 continued

Above 60,000	62.0	170
Parent Income		
One parent	43.2	120
Two parent	56.8	158
Hometown		
Rural	41.7	118
Urban	58.3	165

The Post Traumatic Stress Disorder Self-Report (PTSD-SR) The PTSD-SR consists of three sub-scales representing the diagnostic criteria subgroups of the DSM-IV: reexperiencing, avoidance, and hyperarousal. The survey contains 29 questions, and frequencies of symptoms were rated on a scale from 0 to 7, "no/never" to "extremely/always," respectively.

Sexuality Scale: A Measure of Sexual-Esteem, Sexual-Depression, and Sexual-Preoccupation (Snell, et al. 1992). The Sexuality Scale measures three aspects of sexuality: sexual esteem, sexual depression, and sexual preoccupation. 30 questions were answered on a 1 to 7 Likert scale, with answers ranging from "I strongly agree" to " I strongly disagree."

Lifetime Involvement in Violent Events Survey (LIVES) (McGruder, et al. 2000). The LIVES consists of 15 categories of life-threatening violent events: held hostage, threatened with a gun, shot intentionally with a gun, threatened with a knife, stabbed intentionally with a knife, mugged, chased by a gang, physically attacked, carjacking, sex play, attempted forced sexual intercourse, forced sexual intercourse, forced sex acts, criminal homicide, and military combat-related death. These categories were then answered for the number of times the participant directly experienced the event, witnessed the event, or was told about the event happening to someone they were close to. Number of separate instances ranged from 0 (0 times) to 9 (9 or more times).

Substance Use Questionnaire Information was collected on the use of cocaine, LSD, marijuana, tranquilizers, and other drugs. Participants responded about the number of times (ranging from 0/not at all to 5/forty or more times) they had used the drug in the

last 6 months, and lifetime usage. In addition, participants indicated how frequently they use alcohol, caffeine, and tobacco (from 1 to 9/"not at all" to "several times daily") and then how much they use in one setting.

Open Ended Questions Participants responded to an open-ended question. If they had indicated 'yes' to experiencing a traumatic event, then they were to describe the event. If they had indicated 'no,' they were to describe their most horrifying event. They then rated how fearful, helpless, and horrified they were during/immediately after the event (1 to 7/"not at all" to "extremely"). These events were then rated by the experimenter. For events that were not traumatic, they were scored 0. Events that were traumatic were scored 1. Events that were somewhat traumatic were scored 0/1. Two sets of analyses were done on this data. The analyses that used the '1' score for the somewhat traumatic events were 'lenient,' and the analyses that used the '0' score were 'conservative.'

Procedure

This investigation was approved by the Institutional Review Board for Human Subjects. At each session, participants signed an informed consent. Participation was voluntary, and participants were told that they were allowed to leave without penalty at any point throughout the session; however, only two participants left. Participants were also given locations of counseling services on campus, as the questions were over events that could be very traumatic.

Data Analyses

Actual numbers of participants included in analyses vary because of missing or incomplete data.

Substance Use Use of alcohol and marijuana was relatively high. Among the participants, 76.4% had used alcohol within the past 6 months and 48.2% consumed four or more drinks per setting (see Table 2). With marijuana usage, 19.7% used marijuana within the past 6 months, and 32.9% had used marijuana in their lifetimes. Other drugs had low levels of use and were not used in further analyses. Levels of use of all drugs can be found in Table 3.

Exposure Data Exposure to violent events was high. According to results on the LIVES, 16.3% of participants have been threatened with a knife, 16.3% have been chased by a gang or strangers, and 12.8% have personally experienced forced sexplay. Furthermore, 62.6% have been told about being threatened with a gun, 62.3% have been told about being beaten or physically attacked, and 38.7% have been told about forced intercourse. Prevalence of exposure to violent events is in Table 4

Internal Consistency Coefficient alphas were calculated for the three sub-scales of the PTSD-SR and the three subscales of the Sexuality Scale. As shown in Table 5, the outcome measures were internally consistent.

Gender and Self-Reported Trauma Differences In the first analysis subjects who had answered that they had experienced a traumatic event were compared to those who had not, using a 2 (trauma) X 2 (gender) MANOVA, with the PTSD-SR, Sexuality Scale, and substance use questionnaire as dependent variables.

Results indicate a significant main effect for trauma, Wilk's Lambda F (10, 249) = 2.14, $p<.0219$. Univariate analyses yielded significant differences in the PTSD-SR subscales of reexperiencing [F (1, 258) = 10.43, $p<.0014$], avoidance [F (1, 258) =

Table 2

Alcoholic Beverages Consumed per Setting	%	N
0 - I Don't Drink Alcohol	22.2	63
1 - Half a Drink	9.5	27
2 - One Drink	12.3	35
3 - Two or Three Drinks	6.3	18
4 - Four or Five Drinks	15.1	43
5 - Six Drinks	13.7	39
6 - Between Seven and Twelve Drinks	17.3	49
7 - Thirteen or More Drinks	2.1	6

Table 3

Prevalence of Substance Use

	Participants who had Used the Drug	
Marijuana	%	N
6 month	19.7	55
Life	32.9	93
LSD		
6 month	3.2	9
Life	6.9	19
Uppers		
6 month	3.2	9
Life	7.7	22
Downers		
6 month	3.5	10
Life	5.3	15
Tranquilizers		
6 month	3.9	11
Life	7.7	22
Ecstasy		
6 month	5.3	15
Life	6.7	19

Table 3 continued

Cocaine		
6 month	3.2	9
Life	4.2	12
Crack		
6 month	1.1	3
Life	1.8	4
Poppy		
6 month	1.1	3
Life	1.8	5
Inhalants		
6 month	1.8	5
Life	4.2	12
Codeine		
6 month	7.0	20
Life	12.7	36
Alcohol		
6 month	76.4	217
Caffeine		
6 month	98.6	280
Tobacco		
6 month	34.5	98

Table 4

Exposure to Violent Events

	Direct		Witnessed		Told	
	%	N	%	N	%	N
Held Hostage	1.1	3	3.2	9	39.4	111
Threatened with Gun	11.8	33	12.1	34	62.6	176
Shot with Gun	1.1	3	3.9	11	42.9	121
Threatened with knife	16.3	46	14.6	41	55.2	155
Stabbed with knife	2.9	8	4.6	13	39.4	111
Mugged	4.3	12	4.9	14	49.5	139
Chased by a gang	16.3	46	11.7	33	50.0	141
Beaten	8.5	24	24.5	69	62.3	177
Carjacked	1.4	4	2.5	7	34.3	96
Forced sexplay	12.8	36	4.3	12	47.5	134
Forced attempted sex	4.3	12	1.1	3	40.2	113
Forced intercourse	2.5	7	1.1	3	38.7	109
Forced sex acts	1.8	5	0.7	2	20.2	56
Murder/homicide	----	---	0.4	1	33.8	95
Military/combat	0.7	2	----	---	35.4	99

11.48, p<.0009], hyperarousal [F (1, 258) = 15.38, p<.0001], lifetime marijuana use [F (1, 258) = 5.31, p<.0220], alcohol use in the past six months [F (1, 258) = 4.14, p<.0430], and marginal differences for alcohol use per setting [F (1, 258) = 3.74, p<.0544]. Those who had reported they had experienced a trauma were more likely to exhibit reexperiencing, avoidance, and hyperarousal symptoms, to have higher lifetime use of marijuana, and to have higher six-month and per setting use of alcohol. Means are presented in Table 6.

The results also revealed a significant main effect for gender, Wilk's Lambda F (10, 249) = 4.43, p<.0001. Univariate analyses yielded significant differences in the PTSD-SR scale of reexperiencing [F (1, 258) = 11.28, p<.0009], hyperarousal [F (1, 258) = p<.0274], the Sexuality Scale of sexual preoccupation [F (1, 258) = 11.35, p<.0009], for lifetime marijuana use [F (1, 258) = 6.41, p<.0119], and alcohol use per setting [F (1, 258) = 6.24, p<.0131]. Analysis of the means indicate that women were more likely to exhibit reexperiencing symptoms. On the other hand, men were more likely to be sexually preoccupied, have higher lifetime marijuana use, and consume more alcohol per setting. Means are presented in Table 7.

Women with Direct Experience with Sexual Threat from LIVES This analysis compared woman who had directly experienced sexual threat (included forced sexplay, attempted forced sexual intercourse, forced sexual intercourse, and forced sex acts from the LIVES) with those who had not had direct sexual threat. In addition, only women were included in this analysis because no men had experienced direct sexual threat. A

Table 5

Internal Consistency

	Alpha	Mean	SD
PTSD-SR Scales			
Reexperiencing	.83	2.61	1.20
Avoidance	.78	2.46	1.12
Hyperarousal	.81	2.17	1.22
Sexuality Scales			
Sexual Esteem	.89	4.68	1.29
Sexual Preoccupation	.93	3.19	1.29
Sexual Depression	.81	2.70	1.05

Table 6

PTSD-SR, Sexuality Scale, and Substance Use Scores by Self-Rated Trauma

	No Trauma	Trauma
	N = 224	N = 38
	Mean	Mean
PTSD-SR		
Reexperiencing*	2.49	3.36
Avoidance*	2.34	3.10
Hyperarousal*	2.02	3.00
Sexuality Scale		
Sex-Esteem	4.65	4.82
Sex-Preoccupation	3.19	3.56
Sex-Depression	2.66	2.70
Substance Use		
Alcohol- 6 month*	2.96	3.84
Alcohol- setting^	2.84	3.47
Marijuana- 6 month	0.38	0.68
Marijuana- life*	0.83	1.55

Note: * indicates $p<.05$. ^ indicates marginal significance.

MANOVA was run, with the PTSD-SR, Sexuality Scale, and substance use questionnaire as dependent variables.

A significant main effect was found for direct sex threat in women, Wilk's Lambda F (10, 159) = 3.12, p<.0011. Univariate analyses also indicated significant differences in reexperiencing [F (1, 168) = 21.54, p<.0001], avoidance [F (1, 168) = 19.87, p<.0001], and hypervigilance [F (1, 168) = 18.57, p<.0001], and sexual preoccupation [F (1, 168) = 3.94, p<.0489]. Analysis of the means shows that women who have directly experienced sexual threat have higher occurrences of reexperiencing, avoidance, hypervigilance symptoms, and tend to be more preoccupied with sex/sexuality than those who have not directly experienced sexual threat. Means can be found in Table 8.

Women with No Direct Experience of Sexual Threat from LIVES This analysis investigated women who had not directly experienced sexual assault. Women who had not experienced direct sexual threat, but had experienced indirect sexual threat, were compare to women who had experienced neither direct nor indirect sexual threat. Only women were included in this analysis to remain consistent with analyses for direct sexual threat. For this, a 2 (indirect sex threat) X 1 (female) MANOVA was run, with the PTSD-SR, Sexuality Scale, and substance use questionnaire as dependent variables.

A significant main effect was found for indirect sex threat in women, Wilk's Lambda F (10, 145) = 2.157, p<.0236. Univariate analyses also indicated significant differences in the PTSD-SR scales of reexperiencing [F (1, 154) = 13.39, p<.0003], avoidance [F (1, 154) = 6.37, p<.0126], hypervigilance [F (1, 154) = 5.65, p<.0187],

Table 7

PTSD-SR, Sexuality Scale, and Substance Use scores by Gender

	Male	Female
	N = 68	N = 194
	Mean	Mean
PTSD-SR		
Reexperiencing*	2.35	2.71
Avoidance	2.44	2.45
Hyperarousal*	1.97	2.23
Sexuality Scale		
Sex-Esteem	4.82	4.63
Sex-Preoccupation*	4.05	2.96
Sex-Depression	2.74	2.63
Substance Use		
Alcohol- 6 month	3.51	2.94
Alcohol- setting*	3.47	2.74
Marijuana- 6 month	0.73	0.32
Marijuana- life*	1.50	0.74

Note: * indicates $p<.05$. ^ indicates marginal significance.

Table 8

PTSD-SR, Sexuality Scales, and Substance Use scores by Direct Sex Threat in Women

	Sex Threat	No Sex Threat
	N = 38	N = 132
	Mean	Mean
PTSD-SR		
Reexperiencing*	3.57	2.53
Avoidance*	3.20	2.31
Hyperarousal*	3.06	2.05
Sexuality Scale		
Sex-Esteem	4.74	4.53
Sex-Preoccupation*	3.40	2.98
Sex-Depression	2.66	2.68
Substance Use		
Alcohol- 6 month	3.55	2.93
Alcohol- setting	2.94	2.87
Marijuana- 6 month	0.47	0.30
Marijuana- life	1.07	0.74

Note: * indicates $p<.05$. ^ indicates marginal significance.

alcohol use in the past 6 months [F (1, 154) = 6.99, p<.0090], and alcohol consumption per setting [F (1, 154) = 4.99, p<.0270]. Furthermore, marginal significance was found for the Sexuality Scale subscale of preoccupation [F (1, 154) = 2.98, p<.0863] and lifetime usage of marijuana [F (1, 154) = 3.21, p<.0754]. Analysis of the means indicates that women who have not directly experienced sexual threat, but that have indirectly experienced sexual threat, have higher occurrences of reexperiencing, avoidance, and hypervigilance symptoms of PTSD. Furthermore, they were more likely to be preoccupied with sex/sexuality, use marijuana in their lifetime, have consumed alcohol in the past 6 months, and consume more alcohol per setting than those women who have neither directly nor indirectly experienced sexual threat. Results can be found in table 9.

Correlations of PTSD-SR, Sexuality Scale, Direct Sexual Threat from LIVES, and Substance Use in Women In this analysis, for women only, correlations were run between the three subscales of the PTSD-SR, the three subscales of the Sexuality Scale, Direct Sexual Threat (composed of forced sexplay, attempted forced intercourse, forced intercourse, and forced sex acts from the LIVES) and substance use.

Unsurprisingly, the three subscales of the PTSD-SR were highly correlated with one another (p<.0001). Of the three subscales of the Sexuality Scale, esteem and preoccupation were correlated (p<.0055), as well as esteem and depression (p<.0001). The four measures of substance use, alcohol use in the past six months, alcohol consumed per setting, marijuana use in the past six months and lifetime marijuana use were all closely related (p<.0001).

Table 9

PTSD-SR, Sexuality Scales, and Substance Use scores by Indirect Sex Threat with No Direct Sex Threat

	Sex Threat	No Sex Threat
	N = 88	N = 68
	Mean	Mean
PTSD-SR		
Reexperiencing*	2.78	2.12
Avoidance*	2.46	2.03
Hyperarousal*	2.23	1.78
Sexuality Scale		
Sex-Esteem	4.52	4.71
Sex-Preoccupation^	3.20	2.78
Sex-Depression	2.73	2.63
Substance Use		
Alcohol- 6 month*	3.62	2.79
Alcohol- setting*	3.10	2.62
Marijuana- 6 month	0.51	0.25
Marijuana- life^	1.03	0.61

Note: * indicates $p < .05$. ^ indicates marginal significance.

Direct sexual threat was highly correlated with scores on the PTSD-SR on reexperiencing ($p<.0227$), avoidance ($p<.0001$), and hypervigilance ($p<.0001$). Direct Sex threat was also directly related to sexual preoccupation ($p<.0034$) from the Sexuality Scale. Next, scores on the PTSD-SR subscales were significantly correlated to sexual preoccupation; reexperiencing ($p<.0036$), avoidance ($p<.0312$), and hypervigilance ($p<.0153$). These subscales were also directly related to alcohol use in the past six months; $p<.0018$, $p<.0059$, $p<.0276$, respectively. Alcohol consumption was also found to be related to PTSD-SR symptoms of reexperiencing ($p<.0004$), avoidance ($p<.0017$), and hypervigilance ($p<.0242$), just as lifetime marijuana use was related to these symptoms; $p<.0064$, $p<.0101$, $p<.0064$, correspondingly. Marijuana use in the past six months was found to be marginally related to reexperiencing ($p<.0676$) and hypervigilance ($p<.0762$). Scores on the Sexuality Scales were also related to substance use. Sexual esteem and marijuana use in the past six months related highly ($p<.0027$), as well did lifetime marijuana use ($p<.0029$). In addition, sexual preoccupation was directly related to alcohol use in the past six months ($p<.0002$), alcohol consumption per setting ($p<.0004$), marijuana use in the past six months ($p<.0003$), and lifetime marijuana use ($p<.0001$).

This means that women who have had a direct sexual threat were more likely than women without a direct sexual threat to experience reexperiencing, avoidance, and hypervigilance symptoms, as well as more likely to experience sexual preoccupation. In addition, for these women, sexual preoccupation is highly positively correlated with substance use, as were PTSD symptoms. These results can be found in Table 10.

Table 10

Correlations between PTSD-SR, Sexuality Scale, Direct Sex Threat and Substance Use scores in Women

	Dsexthrt	Reexprnc	Avoidanc	Hyprvgnc	Esteem
Reexprnc	0.158*				
Avoidanc	0.271*	0.629*			
Hyprvgnc	0.280*	0.706*	0.744*		
Esteem	-0.062	0.064	-0.026	-0.010	
Preoccup	0.201*	0.202*	0.150*	0.168*	0.195*
Depressn	0.057	0.066	0.092	0.073	-0.512*
Alcohol6	-0.038	0.216*	0.190*	0.153*	0.137^
AlcoholS	-0.089	0.243*	0.216*	0.156*	0.048
Marjna6	0.014	0.128^	0.082	0.124^	0.212*
MarjnaLf	0.047	0.189*	0.178*	0.188*	0.209*

Table 10 continued

	Preoccup	Depress	Alcohol6	AlcoholS	Marjna6
Depress	-0.078				
Alcohol6	0.257*	-0.014			
AlcoholS	0.241*	0.090	0.811*		
Marjna6	0.248*	-0.090	0.404*	0.304*	
MarjnaLf	0.301*	-0.059	0.463*	0.426*	0.801*

Note: * indicates $p<.05$. ^ indicates marginal significance.

Correlations of PTSD-SR, Sexuality Scale, Indirect Sexual Threat from LIVES, and Substance Use in Women In this analysis, correlations were run between the three subscales of the PTSD-SR, the three subscales of the Sexuality Scale, Indirect Sexual Threat(witnessed or told forced sexplay, attempted forced intercourse, forced intercourse, and force sex acts from the LIVES) and substance use. This analysis includes only women who did not experience a direct sexual threat, in order to look at the relationships between those who have only experienced indirect sexual threat and those who have experienced neither direct nor indirect sexual threat.

As in previous analyses, the subscales of the PTSD-SR were highly correlated with one another ($p<.0001$). The subscales of the Sexuality Scale were also related; sexual esteem is marginally related to sexual preoccupation ($p<.0954$) and highly related to sexual depression ($p<.0001$). Lastly, alcohol use in the past six months was highly related to alcohol consumption per setting, marijuana use in the past six months, and lifetime marijuana use ($p<.0001$). Alcohol use per setting was correlated to marijuana use in the past six months ($p<.0002$) and lifetime marijuana use ($p<.0001$). Unsurprisingly, marijuana use is the past six months was highly related to lifetime marijuana use ($p<.0001$).

This leads to correlations between dependent variables. Indirect sex threat, as measured from the LIVES, was related to reexperiencing ($p<.0084$) and avoidance ($p<.0479$) symptoms of PTSD. Indirect sex threat was also marginally related to alcohol consumption per setting ($p<.0784$). Next, the PTSD symptom of reexperiencing was

related to sexual preoccupation ($p<.0452$), as well as alcohol use in the past six months ($p<.0104$), alcohol consumption per setting ($p<.0003$), and marginally related to lifetime marijuana use ($p<.0671$). Avoidance and hypervigilance were also related to alcohol use in the past six months, ($p<.0227$, $p<.0521$) hypervigilance marginally, alcohol consumption per setting ($p<.0015$, $p<.0103$), and lifetime marijuana use ($p<.0166$, $p<.0568$), again with hypervigilance marginally related. Of the Sexuality Scale subscales, sexual esteem was correlated to marijuana use in the past six months ($p<.0221$) and lifetime marijuana use ($p<.0269$). Finally, sexual preoccupation was related highly related to alcohol use in the past six months ($p<.0007$), alcohol consumption per setting ($p<.0002$), marijuana use in the past six months ($p<.0346$), and lifetime marijuana use ($p<.0014$).

This means that women who have not experienced a direct sexual threat, but have experienced indirect sexual threat exhibit reexperiencing symptoms and avoidance symptoms of PTSD, as well as being more likely to be sexually preoccupied. With these symptoms of PTSD come increased risks of substance use, both in the past six months and lifetime. Results can be found in table 11.

Table 11

Correlations between PTSD-SR, Sexuality Scale, Indirect Sex Threat and Substance Use scores in Women

	Isexthrt	Reexprnc	Avoidanc	Hyprvgnc	Esteem
Reexprnc	0.203*				
Avoidanc	0.153*	0.649*			
Hyprvgnc	0.103	0.710*	0.718*		
Esteem	0.085	0.011	-0.025	-0.003	
Preoccup	0.048	0.155*	0.117	0.115	0.131^
Depressn	-0.037	0.042	0.028	0.038	-0.497*
Alcohol6	0.118	0.198*	0.176*	0.151^	0.075
AlcoholS	0.135^	0.277*	0.244*	0.198*	0.003
Marjna6	0.115	0.105	0.066	0.078	0.181*
MarjnaLf	0.089	0.142^	0.185*	0.148^	0.174*

Table 11 continued

	Preoccup	Depress	Alcohol6	AlcoholS	Marjna6
Depress	0.004				
Alcohol6	0.257*	0.033			
AlcoholS	0.279*	0.121	0.820*		
Marjna6	0.163*	-0.054	0.379*	0.285*	
MarjnaLf	0.242*	-0.026	0.432*	0.436*	0.791*

Note: * indicates $p<.05$. ^ indicates marginal significance.

Discussion and Conclusions

Scores from the sexual threat section of the LIVES predicted PTSD symptoms, replicating previous research. Differences were found between women who had directly experienced sexual threat and those who had not, in addition to differences between women who had not directly experienced sexual threat, but had indirectly experienced sexual threat, and women who not experienced either direct or indirect sexual threat. However, very little evidence was found supporting the hypotheses that negative views of sexuality would be related to experiences with direct and indirect sexual threat or PTSD symptoms. PTSD symptoms, direct, and indirect sexual threat did relate to sexual preoccupation. But, sexual preoccupation on its own is not negative. Males overall had higher sexual preoccupation. For the women it is possible to see that sexual preoccupation could be negative. They could be rethinking their experiences with sexual trauma, as indicated by the very strong relationships between reexperiencing symptoms and sexual preoccupation.

Substance use was incredibly common throughout this study. In the sample, 3/4 had used alcohol in the past six months, and nearly 1/3 consumed four or more drinks per setting. In addition, 1/3 had used marijuana in their lifetimes.

The numbers of participants who had experienced interpersonal violence were very evident. Of the participants, 16.3% had been threatened with a knife, 16.3% had been chased by a gang, 11.8% had been threatened with a gun, and 12.8% had experienced forced sexplay. Furthermore, 62.6% had been told about being threatened with a gun, 33.8% had been told about murder/homicide, and 38.7% had been told about

forced sexual intercourse. Although this is a fairly middle-to-upper class sample, as 88.6% of the sample had household incomes over $30,000 a year, there is still ample evidence of substance use and experiences with violence.

Gender differences were found throughout this study. In every analysis that included both men and women, men were more likely to be sexually preoccupied, and more likely to have used alcohol in the past six month, consumed more per setting, used marijuana in the past six months, and used marijuana in their lifetimes. In contrast, women were more likely to exhibit the PTSD symptom of reexperiencing.
In addition, women were more likely to have experienced direct sexual threat. In this study, no men had experienced direct sexual threat, but 38 women had experienced direct sexual threat. Between women who had experienced direct sexual threat and those who had not, women who had directly been threatened were much more likely to exhibit reexperiencing, avoidance, and hypervigilance symptoms, more likely to be sexually preoccupied, and more likely to have used alcohol in the past six months. Furthermore, there was a trend where women who had been directly sexually assaulted were somewhat more likely to consume more alcohol per setting, and to have used marijuana in the past six months and lifetime.

However, women who have not experienced direct sexual threat, but have indirectly experienced sexual threat by either witnessing sexual threat, or being told about sexual threat from someone close to them, also display symptomologies and substance use more frequently than women who have not experienced sexual threat directly or indirectly. These women with indirect experiences had higher rates of PTSD

symptoms of reexperiencing, avoidance, and hypervigilance, as well as being more likely to have consumed alcohol in the past six months and to have consumed more alcohol per setting. Furthermore, they were somewhat more likely to be sexually preoccupied, and to have used marijuana in their lifetimes. Moreover, there was a trend for greater chances of marijuana use in the past six months.

Disappointingly, there was not much found in relationships between PTSD symptoms and sexual esteem, preoccupation, and depression from the Sexuality Scale. This could be because there actually is very little relationship between experience with sexual violence and PTSD symptoms and these aspects of sexuality and sexual attitudes. However, there were many participants who did not completely answer the Sexuality Scale questions. Analyses were done to compensate for this, with almost no difference in results, but this still could be a mitigating factor. Snell, et al. (1992) did develop this scale on undergraduates, however, Texas A & M is known as a fairly conservative school, so perhaps the participants have fairly conservative sexual attitudes and sexual behaviors. Furthermore, 64.8% of the sample consisted of freshmen. As this study was completed in the fall, 64.8% of the sample was in the process of completing their first semester at college. As the sample was so young, perhaps they have not yet begun to look at their own sexuality or experienced many sexual behaviors. Letourneau, et al. (1996) did find relationships between PTSD and sexual problems. However, the mean age for participants in this study was 18.8 years versus 42.2 years in Letourneau, et al. For most of the participants in this study, they may not have been in long term relationships in which these sexual problems would be evident. Also, as they were so

young, perhaps these sexual traumas were still so recent, they were still dealing with the immediate after effects, not the long-term consequences. Additionally, perhaps there were no direct relationships between sexual problems and sexual attitudes.

For future research, multiple sexual attitudes questionnaires could be used that assess various aspects of sexuality, as well as a sexual problems questionnaire as used in Letourneau, et. al. (1996). Otherwise, the relationship between sexual trauma and sexual attitudes remains unclear. There were fairly strong correlations between sexual preoccupation and substance use for gender and sexual trauma. However, these probably do not indicate the same things. PTSD symptoms, especially reexperiencing, were related to sexual preoccupation in the sexual trauma analyses. This indicates that for female victims of direct and indirect sexual trauma, sexual preoccupation is most likely a negative symptom that corresponds to PTSD symptoms.

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